

Ser. No. 10/725,165

Amendments to the Specification

Please amend the paragraph numbered 0012 in the as-filed application (0014 in the pre-grant publication) as follows:

[0012] The figure shows a bearing system 20 comprising a journal 22 and a bushing 24. The journal and bushing share a central longitudinal axis 500. A transverse centerplane 502 is also shown. The exemplary journal has shaft portions 26A and 26B at first and second ends mounted to associated carrier plates 28A and 28B. The journal has a central portion 30 having a cylindrical bearing surface 32. A lubrication passageway 34 extends to the surface 32 from a central passageway (not shown) to introduce liquid lubricant (e.g., oil) to a space between the bearing surface 32 and a mating bearing surface 35 of the bushing. The exemplary bushing includes a substrate 36 and a coating 38 applied to an inner (interior) cylindrical surface of the substrate. The interior cylindrical surface of the coating 38 provides the bushing bearing surface 35. In the exemplary embodiment, the coating extends along a length L between first and second ends 40A and 40B and has a thickness T. In an exemplary application, the substrate 24 may be a metallic (e.g., steel) planetary gear in a fan drive transmission of a turbofan engine. In such an application, the journal 22 may also be formed of steel. An exemplary coating 38 comprises a base material (e.g., copper) and a solid lubricant (e.g., lead). The combined base and solid lubricant materials may be gradually built up on the substrate inner surface. Exemplary codeposition techniques include sputtering (e.g., U.S. patent 4,904,362), electron jet vapor deposition (e.g., U.S. patent 5,571,332), chemical vapor plating (U.S. patent 4,788,082), plasma spraying, and electroplating.

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Please amend the paragraph numbered 0014 in the as-filed application (0016 in the pre-grant publication) as follows:

[0014] In the exemplary embodiment, the composition non-uniformity provides relatively high concentrations of solid lubricant near the ends 40A and 40B and relatively low concentrations in a central region. With uniform coating compositions, a loss of the hydrodynamic lubrication typically results in bearing failure (e.g., melting and/or seizure). Failures are typically observed near the ~~needs~~ ends of the bearing. The higher than normal solid lubricant concentrations may avoid or delay such failure. The remaining lesser concentration region serves to provide sufficient bearing static strength and wear resistance during normal operation. For example, a uniform high concentration of solid lubricant might leave the coating with too little strength to resist static deformation and achieve a desired normal operating life.